M E M O R A N D U M

TO: DIVISION OF WATER POLLUTION CONTROL - Field Operations Section

FROM: Larry L. Bishop - Region V

SUBJECT: PERRY COUNTY - Fidelity Mine #11
Freeman United Coal Mining Company
Mine Drainage

DATE: February 13, 1976

On the above date, I made an investigation of the Fidelity Mine #11 located approximately four miles west of DuQuoin. During the investigation I was accompanied by Mr. Paul Seastrom, Mine Reclamation Manager for the Freeman United Coal Mining Company. Drainage from the mine is to Beaucoup Creek in the Big Muddy Watershed, by way of Panther Creek or Youngs Creek.

NPDES PERMITS

The Fidelity Mine #11 is operating under two NPDES permits. Permit #IL 0000 302 became effective on January 20, 1975. The permit expires September 30, 1979. The permit is issued for discharges to Youngs Creek, a tributary of Beaucoup Creek in the Big Muddy Watershed. Discharges 001 and 003 are covered under this permit. Discharge Monitoring Reports are submitted on a monthly basis by the coal company. The reports are complete and show no violations of the permit conditions. A check of our reporting files indicates the company is now starting to submit the reports on a quarterly basis, as outlined in the permit. This is based on the fact that we have not received monitoring reports for the months of January and February, as of March 18, 1976.

At the time of this investigation, samples were collected of the two discharges covered under Permit #IL 0000 302. Laboratory analysis of the sample collected is listed below:

LAB. #A13776
(Discharge 001)

Iron (Total)	0.1 mg/l	Suspended Solids	5 mg/l
Manganese	0.63 mg/l	pH	8.0
Sulfate	2800 mg/l	Alkalinity	235 mg/l
TS/EC	2205 mg/l	Total Acidity	0 mg/l
		R.O.E.	3690 mg/l

PERRY COUNTY - Fidelity Mine #11
Freeman United Coal Mining Co.
Mine Drainage

LAB. #A13777
(Discharge 003)

Iron (Total)	0.3 mg/1	Suspended Solids	11 mg/1
Manganese	2.00 mg/1	pH	7.7
Sulfate	3000 mg/1	Alkalinity	290 mg/1
TS/EC	2308 mg/1	Total Acidity	0 mg/1
		R.O.E.	3990 mg/1

The second NPDES Permit #IL 0035 840 was issued to cover discharge 004. This is referred to by the mine company as the Panther Creek Discharge. The permit became effective on March 6, 1975. Discharge Monitoring Reports have been submitted in the same manner as reported for Permit #IL 0000 302. This permit expires September 30, 1979.

While making the inspection of the discharge point with Mr. Seastrom, we discussed the sampling location. Mr. Seastrom collects the sample from Panther Creek on a blacktop road a short distance below the actual confluence of Panther Creek and the mine drainage stream. However, Panther Creek has been mined out above this point and the original stream bed exists for only a very small section of the original watershed. I discussed this with Mr. Seastrom and stated that it may be advisable to collect the sample from the haulage road in the main mine drainage stream prior to its entrance into the original stream bed of Panther Creek. In our discussion, Mr. Seastrom pointed out there is drainage entering this area from other mining activities; namely, Burning Star #2, operated by Consolidation Coal Company. This mine operates north of the Fidelity Mine #11. There is apparently no adequate location to sample this discharge without the results being influenced by drainages from abandoned strip pits and pumpages from the Consolidation Coal Company mine. In fact, some of the Consolidation Coal Company's drainages flow directly into the Fidelity Mine #11 drainage diversion ditch prior to any Freeman discharges into this ditch. There are adequate settling areas located on the mine property and within the drainage of the diversion ditch, to act as settling basins. Also, the laboratory results and physical appearance of the discharge indicates the settling areas are acceptable.

At this time, I collected two samples which could be considered discharges of Sampling Point 004, under this permit.

The first sample was collected at what is referred to by the coal company, as the Double Culvert on the haul road located north of the mine sampling point. Again, the water is influenced at this point by drainage from Consolidation Coal Company. The discharge was collected in a natural unnamed tributary to Panther Creek. Laboratory analysis of the sample collected is listed as follows:

PERRY COUNTY - Fidelity Mine #11
Freeman United Coal Mining Co.
Mine Drainage

LAB. #A13774

Iron (Total)	0.2 mg/1	Suspended Solids	15 mg/1
Manganese	0.50 mg/1	pH	8.1
Sulfate	1000 mg/1	Alkalinity	135 mg/1
TS/EC	1274 mg/1	Total Acidity	0 mg/1
		R.O.E.	2080 mg/1

The second sample was collected from the point used by Mr. Seastrom as the reporting point for the discharge 004. This is on a blacktop road located south of the above sample. At this point, the water was clear and the stream appeared to be normal, except for a slight vegetative growth in spotted areas. Laboratory analysis of the sample collected is listed below:

LAB. #A13775

Iron (Total)	0.3 mg/1	Suspended Solids	18 mg/1
Manganese	0.43 mg/1	pH	8.2
Sulfate	1100 mg/1	Alkalinity	120 mg/1
TS/EC	1222 mg/1	Total Acidity	0 mg/1
		R.O.E.	1790 mg/1

ILLINOIS PERMIT

The Fidelity Mine #11 is also operating under Illinois Chapter 3 Permit #1973-EA-13-OP; Chapter IV Permit #1973-MD-8-OP and a recent Supplemental Permit for additional refuse disposal #1973-MD-9-OP-1. An investigation of the mine area on this date indicated the mine was operating within the framework of these permits. Refuse was being hauled to what at one time was intended to be the alternate refuse disposal site, but is now being used exclusively for the refuse disposal. Also, the Supplemental Permit was issued for an extension of this general area. The new area was not being used at the time of this investigation. The eastern end of this refuse has been covered by the coal company. A large portion of the area has not been covered, but is still active and being used for the disposal of the refuse. Drainage from this general location is confined within the mine property. I could not find any pollutional threat in this area.

During the investigation, there were no pit pumpages from the active pit. I did collect a water sample located in the mine diversion ditch, just below the active pit area. There was no visible flow although there was a pool condition in a large portion of the ditch. Laboratory analysis of the sample collected is listed below:

LAB. #A13773

Iron (Total)	0.8 mg/1	Suspended Solids	31 mg/1
Manganese	1.00 mg/1	pH	8.0
Sulfate	1900 mg/1	Alkalinity	340 mg/1
TS/EC	2331 mg/1	Total Acidity	0 mg/1
		R.O.E.	3600 mg/1

PERRY COUNTY - Fidelity Mine #11
Freeman United Coal Mining Co.
Mine Drainage

In general, the Fidelity Mine #11 appeared to be operating within the framework of their NPDES and Illinois permits.

Larry L. Bishop
Larry L. Bishop
Environmental Protection Specialist

LLB:mg
3/26/76
cc: U.S.E.P.A. - Lee Townsend
U.S.E.P.A. - Compliance Section - Reg. V

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY--DIVISION OF WATER POLLUTION CONTROL

SPECIAL ANALYSIS FORM

Time Collected 1:15 P.M. Sub-Basin REGION 5

Date Collected FEB 13, 76 Collector LARRY L. BISHOP

Facility Name: FIDELITY #11 Facility Number: File Town DEWITT COUNTY

Stream Name(s) BIG MUDDY, BEAUCOUP, WILLIAMS Stream Code: NC

Source of Sample: (Exact Location) Lake of Egypt Discharge (001)

Physical Observations, Remarks: water clear, bed contained aquatic vegetation

Flow 21000gpm	Field Dissolved Oxygen	Field pH	Field Temp.

Arsenic	Coliform/100ml	BOD
Barium	Fecal Coliform 100 ml	COD
Boron	Fecal Strep 100 ml	2205 TS/EC
Cadmium	Algae (Total) /ml	5 Susp.Solids
Copper	Ammonia (N)	Vol.Susp.Solids
Chromium (tri)	Organic Nitrogen (N)	8.0 pH (units)
Chromium (hex)	Nitrate + Nitrite(N)	Turbidity (JTU)
0.1 Iron (Total)	Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride	235 Alkalinity
Lead	Fluoride	0 Total Acidity
0.63 Manganese	2800 Sulfate	Free Acidity
Mercury (ppb)	Cyanide	Oil
Nickel	MBAS	3690 RVE Other (Specify)
Selenium	Phenol (ppb)	
Silver		
Zinc		

Results in mg/l unless otherwise noted.

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Received by:

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FOR LAB USE ONLY

Lab Number: A13776 Rec'd by: [illegible]

Date sample rec'd: FEB 13 1976 Time: 4:15

Date analysis completed: FEB 24 19

Date results forwarded: FEB 24 197

Total Tests requested: 8 Tests run

Lab Section: Marion Supervisor: [illegible]

3/73

ENVIRONMENTAL PROTECTION AGENCY--DIVISION OF WATER POLLUTION CONTROL

SPECIAL ANALYSIS FORM

Time Collected: 1:25 P.M. | Sub-Basin: Region 5

Date Collected: FEB 13 1976 | Collector: Larry L. Bishop

Facility Name: Fidelity #11 | Facility Number: | File Town: Perry County

Stream Name(s): Big Muddy, Beaucoup | Stream Code: NC

Source of Sample: (Exact Location) Borrow Pit Discharge (003)

Physical Observations, Remarks: Water clear, well contained against growth

Flow >1000 gpm	Field Dissolved Oxygen	Field pH	Field Temp.

	Arsenic		Coliform/100ml		BOD
	Barium		Fecal Coliform 100 ml		COD
	Boron		Fecal Strep 100 ml	2308	TS/EC
	Cadmium		Algae (Total) /ml	11	Susp. Solids
	Copper		Ammonia (N)		Vol. Susp. Solids
	Chromium (tri)		Organic Nitrogen (N)	7.7	pH (units)
	Chromium (hex)		Nitrate + Nitrite (N)		Turbidity (JTU)
0.3	Iron (Total)		Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride	290	Alkalinity
	Lead		Fluoride	0	Total Acidity
2.00	Manganese	3000	Sulfate		Free Acidity
	Mercury (ppb)		Cyanide		Oil
	Nickel		MBAS	3990	TDS Other (Specify)
	Selenium		Phenol (ppb)		
	Silver				
	Zinc				

Results in mg/l unless otherwise noted.

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Transported by: Larry L. Bishop
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Transported by:
Received by:

FOR LAB USE ONLY
Lab Number: A1377 Rec'd by: [illegible]
Date sample rec'd: FEB 13 1976 Time: 4:15
Date analysis completed: FEB 24 1976
Date results forwarded: FEB 24 1976
Total Tests requested: 8 Tests run:
Lab Section: Marion Supervisor: [illegible]

3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY--DIVISION OF WATER POLLUTION CONTROL (2)

SPECIAL ANALYSIS FORM

Time Collected 11:45 A.M. Sub-Basin [illegible]

Date Collected FEB 13, 1976 Collector LARRY L. BISHOP

Facility Name: FIDELITY #11 Facility Number: File Town PERRY COUNTY

Stream Name(s) BIG MUDDY, BEAUCOUP, PANTHER Stream Code: NCC

Source of Sample: (Exact Location) @ Panther Creek Trib. at NPDES 004 discharge at the double culvert

Physical Observations, Remarks: water clear, stream bed contained aquatic veg. growth

Flow > 1000 ppm	Field Dissolved Oxygen	Field pH	Field Temp.

	Arsenic		Coliform/100ml		BOD
	Barium		Fecal Coliform 100 ml		COD
	Boron		Fecal Strep 100 ml	1274	TS/EC
	Cadmium		Algae (Total) /ml	15	Susp. Solids
	Copper		Ammonia (N)		Vol. Susp. Solids
	Chromium (tri)		Organic Nitrogen (N)	7.1	pH (units)
	Chromium (hex)		Nitrate + Nitrite (N)		Turbidity (JTU)
0.2	Iron (Total)		Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride	135	Alkalinity
	Lead		Fluoride	0	Total Acidity
0.50	Manganese	1000	Sulfate		Free Acidity
	Mercury (ppb)		Cyanide		Oil
	Nickel		MBAS	2080	Other (Specify) R45
	Selenium		Phenol (ppb)		
	Silver				
	Zinc				

Results in mg/l unless otherwise noted.

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Lab Number: 11377 Rec'd by [illegible]

Date sample rec'd: FEB 13 1976 Time: 4:[illegible]

Date analysis completed: FEB 24 1976

Date results forwarded: FEB 24 1976

Total Tests requested: 8 Tests run: [illegible]

Lab Section [illegible] Supervisor [illegible]

3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY--DIVISION OF WATER POLLUTION CONTROL

SPECIAL ANALYSIS FORM

Time Collected 12:10 P.M. Sub-Basin REGION 5

Date Collected FEB 13 1976 Collector LARRY L. BISHOP

Facility Name: Facility Number: File Town PERRY COUNTY

FIDELITY # 11

Stream Name(s) BIG MUDDY, BEAUCOUP PANTHER Stream Code: NCE

Source of Sample: (Exact Location) Gaston Creek - NPDES 004

at blacktop road bridge.

Physical Observations, Remarks: water clear, brownish, appearing good in stream.

Flow 71000 GPM	Field Dissolved Oxygen	Field pH	Field Temp.

Arsenic	Coliform/100ml	BOD
Barium	Fecal Coliform 100 ml	COD
Boron	Fecal Strep 100 ml	TS/EC
Cadmium	Algae (Total) /ml	18 Susp.Solids
Copper	Ammonia (N)	Vol.Susp.Solids
Chromium (tri)	Organic Nitrogen (N)	8.2 pH (units)
Chromium (hex)	Nitrate + Nitrite(N)	Turbidity (JTU)
0.3 Iron (Total)	Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride	120 Alkalinity
Lead	Fluoride	0 Total Acidity
0.43 Manganese	1100 Sulfate	Free Acidity
Mercury (ppb)	Cyanide	Oil
Nickel	MBAS	1990 Other-(Specify)
Selenium	Phenol (ppb)	
Silver		
Zinc		

Results in mg/l unless otherwise noted.

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Lab Number: 13775 Rec'd by:

Date sample rec'd: FEB 13 1976 Time:

Date analysis completed:

Date results forwarded: FEB 24 1976

Total Tests requested: 8 Tests run

Lab Section: Supervisor:

3/73

DIVISION OF WATER POLLUTION CONTROL

SPECIAL ANALYSIS FORM

Time Collected 11:15 A.M. Sub-Basin REGION 5

Date Collected FEB 13, 1976 Collector LARRY L. BO[illegible]

Facility Name: FIDELITY #11 Facility Number: File Town DERRY COUNTY

Stream Name(s) BIG MUDDY BEAUCOUP; PANTHER Stream Code: NCE

Source of Sample: (Exact Location) Main drainage stream at Northeast Corner of pit

Physical Observations, Remarks: Water clear, bed normal

Flow None	Field Dissolved Oxygen	Field pH	Field Temp.

	Arsenic		Coliform/100ml		BOD
	Barium		Fecal Coliform 100 ml		COD
	Boron		Fecal Strep 100 ml	[illegible]	TS/EC
	Cadmium		Algae (Total) /ml	31	Susp.Solids
	Copper		Ammonia (N)		Vol.Susp.Solids
	Chromium (tri)		Organic Nitrogen (N)	8.0	pH (units)
	Chromium (hex)		Nitrate + Nitrite(N)		Turbidity (JTU)
0.8	Iron (Total)		Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride	340	Alkalinity
	Lead		Fluoride	0	Total Acidity
1.00	Manganese	1900	Sulfate		Free Acidity
	Mercury (ppb)		Cyanide		Oil
	Nickel		MBAS	3600	Other (Specify) [illegible]
	Selenium		Phenol (ppb)		
	Silver				
	Zinc				

Results in mg/l unless otherwise noted.

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Transported by: [illegible]
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Received by:

FOR LAB USE ONLY
Lab Number: 13773 Rec'd by [illegible]
Date sample Rec'd FEB 13 1976 Time: 4:15
Date analysis completed: FEB 24 1976
Date results forwarded: FEB 24 1976
Total Tests requested: 8 Tests run:
Lab Section [illegible] Supervisor [illegible]

3/73